A Narrow-band Survey of the Environments of Galactic B[e] Stars

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We present initial results of our wide-field narrow-band H α survey of the environments of galactic B[e] stars in the northern hemisphere. A total of nearly 100 stellar environments have been imaged using the Palomar 60" telescope. The B[e] stars included in our survey so far include those classified as supergiant B[e], Herbig AeBe and unclassified B[e] stars. The intent of the survey is to attempt to determine the likely evolutionary status of individual B[e] stars through analysis of their circumstellar environments. Analysis of the circumstellar environments of other massive stars (e.g., Wolf-Rayet stars) have provided valuable clues as to their likely evolutionary path through abundance analyses of ejecta materials and assessment of timescales for formation of circumstellar structures. We are particularly interested in the evolutionary status of supergiant B[e] stars and their relation to other massive, evolved stars such as Wolf-Rayets and Luminous Blue Variables. To date, approximately 25% of observed B[e] stars show circumstellar structures that are likely associated with their evolutionary past. Notably, a number of B[e] stars have associated bipolar or monopolar optical structures. Individual objects and their possible past evolution are discussed in this presentation. However, follow-up spectroscopy is required to determine whether observed features are most likely to be associated with pre-main sequence or post-main sequence phases.